

WHAT IS CLAIMED IS:

1 1. A method of collecting network traffic data comprising:
2 receiving a group of information;
3 determining whether to process the group of information for network data
4 collection according to a sample algorithm;
5 processing the group of information for network data collection if the
6 determination is to process the group of information; and
7 forwarding the group of information to a destination.

1 2. The method of Claim 1 wherein the group of information is an IP
2 packet.

1 3. The method of Claim 1 wherein the sample algorithm is selected from
2 one of linear, exponential, natural log, burst, and traffic attribute.

1 4. The method of Claim 1 wherein forwarding the group of information
2 to the destination comprises:
3 identifying the destination using a forwarding table;
4 if the destination is in the forwarding table, automatically forwarding the
5 group of information to the destination; and
6 otherwise sending the group of information to one or more processing engines
7 to determine routing to the destination and forwarding the group of
8 information according to the determined routing.

1 5. The method of Claim 1 wherein forwarding the group of information
2 to the destination is performed after processing the group of information.

6. The method of Claim 1 wherein the processing of the group of information for network data collection comprises:

- determining if the group of information is part of one or more recorded traffic flows;
- creating a new entry in a table if the group of information is not part of the one or more recorded traffic flows;
- incrementing a field in an existing entry in the table if the group of information is part of the one or more recorded traffic flows; and
- time stamping the group of information.

7. The method of Claim 6 wherein the processing of the group of information for network data collection further comprises:

- creating a traffic information packet; and
- transmitting the traffic information packet to a network traffic data collection application.

8. The method of Claim 7 wherein the traffic information packet comprises a header and one or more flow records.

9. An apparatus for collecting network traffic data comprising:

- means for receiving a group of information;
- means for determining whether to process the group of information for network data collection according to a sample algorithm;
- means for processing the group of information for network data collection if the determination is to process the group of information; and
- means for forwarding the group of information to a destination.

10. The apparatus of Claim 9 wherein the group of information is an IP packet.

11. The apparatus of Claim 9 wherein the sample algorithm is selected from one of linear, exponential, natural log, burst and traffic attribute.

1 12. The apparatus of Claim 9 wherein the means for forwarding the group
2 of information to the destination comprises:
3 means for identifying the destination using a forwarding table;
4 means for automatically forwarding the group of information to the destination
5 if the destination is in the forwarding table; and
6 means for sending the group of information to one or more processing engines
7 to determine routing to the destination and then forward the group of
8 information according to the determined routing otherwise.

1 13. The apparatus of Claim 9 wherein the means for processing of the
2 group of information for network data collection comprises:
3 means for determining if the group of information is part of one or more
4 recorded traffic flows;
5 means for creating a new entry in a table if the group of information is not part
6 of the one or more recorded traffic flows;
7 means for incrementing a field in an existing entry in the table if the group of
8 information is part of the one or more recorded traffic flows; and
9 means for time stamping the group of information.

1 14. The apparatus of Claim 13 herein the means for processing of the
2 group of information for network data collection further comprises:
3 means for creating a traffic information packet; and
4 means for transmitting the traffic information packet to a network traffic data
5 collection application.

1 15. The apparatus of Claim 14 wherein the traffic information packet
2 comprises a header and one or more flow records.

1 16. A network node for collecting network traffic data having one or more
2 processing engines and a memory comprising a set of instructions to:
3 receive a group of information;

4 determine whether to process the group of information for network data
5 collection according to a sample algorithm;
6 process the group of information for network data collection if the
7 determination is to process the group of information; and
8 forward the group of information to the destination.

1 17. The network node of Claim 16 wherein the group of information is an
2 IP packet.

1 18. The network node of Claim 16 wherein the sample algorithm is
2 selected from one of linear, exponential, natural log, burst and traffic attribute.

1 19. The network node of Claim 16 wherein the set of instructions to
2 forward the group of information to the destination comprises a set of instructions to:
3 identify the destination using a forwarding table;
4 if the destination is in the forwarding table, automatically forward the group of
5 information to the destination; and
6 otherwise send the group of information to one or more processing engines to
7 determine routing to the destination and forward the group of
8 information according to the determined routing.

1 20. The network node of Claim 16 wherein the set of instructions to
2 process the group of information for network data collection comprises a set of
3 instructions to:
4 determine if the group of information is part of one or more recorded traffic
5 flows;
6 create a new entry in a table if the group of information is not part of the one
7 or more recorded traffic flows;
8 increment a field in an existing entry in the table if the group of information is
9 part of the one or more recorded traffic flows; and
10 time stamp the group of information.

1 21. The network node of Claim 20 wherein the set of instructions to
2 process the group of information for network data collection further comprises a set of
3 instructions to:
4 create a traffic information packet; and
5 transmit the traffic information packet to a network traffic data collection
6 application.

1 22. The network node of Claim 21 wherein the traffic information packet
2 comprises a header and one or more flow records.

1 23. An apparatus for collecting network traffic data comprising:
2 one or more route processors;
3 one or more switch fabrics coupled to the one or more route processors;
4 one or more destination line cards coupled to the one or more switch fabrics;
5 a source line card coupled to the one or more switch fabrics, wherein the
6 source line card
7 receives a group of information;
8 determines whether to process the group of information for network
9 data collection according to a sample algorithm;
10 processes the group of information for network data collection if the
11 determination is to process the group of information; and
12 forwards the group of information to one of the one or more
13 destination line cards.

1 24. The apparatus of Claim 23 wherein the group of information is an IP
2 packet.

1 25. The apparatus of Claim 23 wherein the sample algorithm is selected
2 from one of linear, exponential, natural log, burst and traffic attribute.

26. The apparatus of Claim 23 wherein to forward the group of information to one of the one or more destination line cards, the source line card: identifies the one of the one or more destination line cards using a forwarding table; if the one of the one or more destination line cards is in the forwarding table, automatically forwards the group of information to the one of the one or more destination line cards; and otherwise sends the group of information to one or more processing engines to determine routing to one of the one or more destination line cards and then forwards the group of information according to the determined routing.

27. The apparatus of Claim 26 wherein the one or more processing engines is located on the source line card.

28. The apparatus of Claim 23 wherein to process the group of information for network data collection, the source line card: determines if the group of information is part of one or more recorded traffic flows; creates a new entry in a table if the group of information is not part of the one or more recorded traffic flows; increments a field in an existing entry in the table if the group of information is part of the one or more recorded traffic flows; and time stamps the group of information.

29. The apparatus of Claim 28 wherein to process the group of information for network data collection, the source line card further: creates a traffic information packet; and transmits the traffic information packet to a network traffic data collection application.

- 1 30. The apparatus of Claim 29 wherein the traffic information packet
- 2 comprises a header and one or more flow records.

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